

### Northwest Oregon Coast Range



Salmonberry and red elderberry over a carpet of piggyback plant.

#### Coast Range key

- A. Herbaceous community within channel-immersion tolerant species present, often grassy and weedy
  - 1. Water-carpet  $\geq 5\%$  ..... **Water-carpet** p.188
  - 2. Horsetail present, horsetail > waterparsley ..... **Horsetail** p.185  
*See Equisetum arvense Association for wetland phase (Christy p.117)*
  - 3. Waterparsley present, waterparsley > horsetail ..... **Waterparsley** p.192  
*See Oenanthe sarmentosa Association for wetland phase (Christy p. 133)*
  
- B. Herbaceous community at channel margin or mid-channel bar, immersion tolerant species (water-carpet, waterparsley, yellow monkeyflower) absent. Sorrel, lady fern, and piggyback plant codominant, salmonberry and stink currant absent..... **Sorrel-piggyback plant** p.196

*For more herb-dominated communities (aquatic beds, emergent marshes, marshes, fens/peatlands, or wet prairies), see herbaceous wetlands key (Christy pp. 18-20).*

- C. Shrub communities; trees may be present (See also D, E and F for special tree communities.)
1. California hazel dominant
    - a. Salmonberry important shrub.....  
.....**Big leaf maple/California hazel-salmonberry** p. 242
    - b. Salmonberry absent, vine maple important shrub  
.....**California hazel-vine maple/sorrel** p. 231
  2. Salmonberry and/or stink currant >5% or dominant shrubs
    - a. Stink currant an important shrub
      - 1) Devil's club dominant or co-dominant, salmonberry minor or absent  
.....**Devil's club-stink currant** p. 214
      - 2) Immersion tolerant species water-carpet and/or waterparsley present, at channel margin  
.....**Salmonberry-stink currant/water-carpet** p. 200
      - 3) Immersion tolerant species absent  
.....**Salmonberry-stink currant group** p. 205
        - a) Foamflower > sum of betony, Siberian miner's lettuce and toothleaved monkeyflower, or sum of the 3 <5%  
.....**Salmonberry-stink currant-foamflower phase** p. 211
        - b) Sum of betony, Siberian miner's lettuce and toothleaved monkeyflower >5%  
.....**Salmonberry-stink currant-betony phase** p. 207
    - b. Salmonberry>5%, stink currant minor or absent
      - 1) Alaska huckleberry dominant  
.....**Alaska huckleberry-salmonberry** p. 239
      - 2) California hazel cominant or codominant with salmonberry  
.....**Big leaf maple/California hazel-salmonberry** p. 242
      - 3) Sum of lady fern and piggyback plant>sword fern  
.....**Salmonberry/piggyback plant-sorrel group** p. 218

- a) Lady fern > sword fern or oval-leaved mitrewort > 2% .....  
**Salmonberry/piggyback plant-sorrel-oval-leaved mitrewort phase** p. 221
- b) Sword fern > lady fern, or oval-leaved mitrewort absent .....  
**Salmonberry/piggyback plant-sorrel-sword fern phase** p. 225
- 4) Sword fern > sum of lady fern and piggyback plant .....  
salmonberry communities on terraces, steep banks, and slides,  
transitional to upland
- a) Steep bank/slides, moist indicators (betony, piggyback plant)  
absent or very minor ..... **Salmonberry-vine maple** p. 244
- b) Betony and/or piggyback plant always present  
..... **Salmonberry/sword fern** p. 234

3. Douglas spiraea thicket, see *Spiraea douglassii* Association (Christy p. 58)

D. Red alder/skunk cabbage swamps

1. Slough sedge  $\geq 5\%$ , dominant or co-dominant with skunk cabbage .....  
*Alnus rubra/Carex obnupta-Lysichiton americanus* Association (Christy  
p. 22)
2. Slough sedge  $< 5\%$ , lady fern may be co-dominant with skunk cabbage,  
*Alnus rubra/Athyrium filix-femina-Lysichiton americanus* Association  
(Christy p. 21)

E. Sitka spruce swamps

1. Slough sedge dominant herb, with skunk cabbage and waterparsley in  
wet hollows cabbage .....  
*Picea sitchensis/Carex obnupta-Lysichiton americanus* Association  
(Christy p. 28)
2. Skunk cabbage swamp, slough sedge minor or absent, red osier  
dogwood dominant shrub .....  
*Picea sitchensis/Cornus sericea/Lysichiton americanus* Association  
(Christy p. 29)

**F. Willow communities**

1. Pacific willow co-dominant with Sitka willow, skunk cabbage swamp.....  
*Salix lucida* ssp. *lasiandra*/*Salix sitchensis*/*Lysichiton americanus*  
Association (Christy p. 56)
2. Sitka willow minor or absent, Sitka willow dominant, with skunk  
cabbage and/or aquatic sedge the dominant herbs  
.....*Salix sitchensis* complex (Christy p. 57)

***For more shrub-dominated communities (shrub swamps), see shrubland wetlands key (Christy p. 15-17).***

***For more tree-dominated communities (forested swamps), see forest and woodlands wetlands key (Christy p. 13-14).***



**Lady fern is one of the most reliable riparian indicators.**



**The Coast Range's most typical riparian species: salmonberry, trillium-leaved oxalis and piggyback plant.**



**Bedrock reach on the North Fork Smith River.**



Flood deposits can reroute creeks in the valley floor. The 1995 photo of the Siuslaw NF's Big Creek (left) shows a major channel. During the 1996 floods, the site was transformed into a smaller side channel (1997 photo, right). The coarse gravel bar could develop a Water-carpet, Waterparsley, or Horsetail community over time.



**Horsetail community: 2 years after the flood that filled in the old channel with this new sandy gravel deposit.**



**In channel:**

Horsetail: EQUIS..... p. 185

Water-carpet: CHGL5 ..... p. 188

Waterparsley: OESA..... p. 192

***Equisetum***  
**Horsetail**  
**EQUIS**

N=7 (SNF 6, EBLM 1)

SPECIES	COMMON NAME	CONSTANCY %	TYPICAL COVER %
<b>Trees-seedlings</b>			
<i>Alnus rubra</i>	Red alder	29	Tr
<b>Shrubs</b>			
<i>Rubus spectabilis</i>	Salmonberry	71	1
<b>Herbs</b>			
<i>Equisetum</i>	Horsetail species	100	28
<i>Athyrium filix-femina</i>	Lady fern	86	4
<i>Stachys mexicana</i>	Mexican betony	86	2
<i>Oxalis trilliifolia</i>	Trillium-leaved sorrel	71	9
<i>Digitalis purpurea</i>	Common foxglove	71	4
<i>Tolmiea menziesii</i>	Piggyback plant	71	3
<i>Oenanthe sarmentosa</i>	Waterparsley	71	3
<i>Galium triflorum</i>	Sweetscented bedstraw	71	1
<i>Holcus lanatus</i>	Common velvet-grass	57	5
<i>Glyceria striata</i>	Tall mannagrass	57	4
<i>Mimulus moschatus</i>	Musk-flower	57	3
<i>Senecio jacobaea</i>	Tansy ragwort	57	2
<i>Mimulus dentatus</i>	Tooth-leaved monkeyflower	57	2
<i>Veronica americana</i>	American brooklime	57	2
<i>Cirsium arvense</i>	Canada thistle	57	1
<i>Viola glabella</i>	Stream violet	57	Tr
<i>Carex deweyana</i>	Dewey's sedge	43	4
<i>Stellaria media</i>	Chickweed	43	3
<i>Petasites frigidus</i>	Coltsfoot	43	2
<i>Rumex obtusifolius</i>	Bitter dock	43	2
<i>Scirpus microcarpus</i>	Small-flowered bullrush	43	2
<i>Claytonia sibirica</i>	Siberian miner's lettuce	43	1
<i>Prunella vulgaris</i>	Selfheal	43	1
<i>Bromus vulgaris</i>	Colombian brome	43	1
<i>Stellaria crispa</i>	Crisp sandwort	43	1
<i>Cirsium</i>	Thistle species	43	Tr
<i>Juncus</i>	Rush species	43	Tr
<i>Chrysosplenium glechomifolium</i>	Water-carpet	43	Tr
<i>Polystichum munitum</i>	Sword fern	43	Tr
<i>Cardamine occidentalis</i>	Western bittercress	43	Tr

**Elevations:** 30 to 600 feet (average 280 feet).



**Horsetail community: grassy open gravelly cobble bar.**

**Community:** The Horsetail community is a weedy, grassy community with almost no shrub layer. Red alder seedlings may be present, but no mature trees are found. This type occurs with the lowest overhanging tree cover of the coastal streamside communities. Horsetail is the most constant and abundant species. Lady fern, Mexican betony, trillium-leaved sorrel, common foxglove, piggyback plant, and waterparsley are the most prominent associated species. Grasses average 27% summed cover; graminoids average 4%. Weeds such as reed canarygrass can completely dominate this open, frequently disturbed community.

**Geomorphic environment:** This community is found in wide valleys (valley width >100m). Two types of geomorphic settings are common. Gently sloping sandy gravel/cobble bars within annual flood zone are the most frequent. These have pockets or thin layers of sand overlaying coarser alluvium. Summer low flow is generally within 20 cm. These sites are flooded much of the winter. The Horsetail community also occurs in association with beaver dams. Such sites can have fairly deep poorly drained soil. One pit showed the water table within 10 cm of the surface and mottling at 36cm, soil textures silt over silt loam. Another site showed coarse sand deposited over fine sand, overlying clayey sand, sandy clay, and clay.

**Wetland rating:**

Community meets wetland test	No
Plots meeting wetland criteria	43%
Wetland indicators among dominant species	61% (range 40-100%)

Both settings provide good seedbeds for opportunistic weedy species and species tolerant of flooding.



**Beautiful in flower, foxglove is a common non-native invader in the Horsetail community.**

**Non-natives:** Exotic species were found on all plots in the sample.

EXOTIC	COMMON NAME	CONSTANCY %	PLOTS	TYPICAL COVER %
<i>Digitalis purpurea</i>	Common foxglove	71	5	4
<i>Holcus lanatus</i>	Common velvet-grass	57	4	5
<i>Senecio jacobaea</i>	Tansy ragwort	57	4	2
<i>Cirsium arvense</i>	Canada thistle	57	4	1
<i>Stellaria media</i>	Chickweed	43	3	3
<i>Rumex obtusifolius</i>	Bitter dock	43	3	2
<i>Cirsium</i>	Thistle species	43	3	Tr
<i>Phalaris arundinacea</i>	Reed canarygrass	29	2	44
<i>Agrostis stolonifera</i>	Creeping bentgrass	29	2	6
<i>Senecio vulgaris</i>	Common groundsel	29	2	2
<i>Leucanthemum vulgare</i>	Oxeye daisy	29	2	1
<i>Cerastium glomeratum</i>	Sticky chickweed	29	2	Tr
<i>Cirsium vulgare</i>	Bull thistle	29	2	Tr
<i>Erechtites minima</i>	Coastal burnweed	14	1	5
<i>Agrostis stolonifera</i>	Creeping bentgrass	14	1	1

***Chrysosplenium glechomaefolium***  
**Water-carpet**  
**CHGL5**

N=7 (SNF 5, SBLM 2)

SPECIES	COMMON NAME	CONSTANCY %	TYPICAL COVER %
<b>Shrubs</b>			
<i>Rubus spectabilis</i>	Salmonberry	86	16
<i>Sambucus racemosa</i>	Red elderberry	57	16
<b>Herbs</b>			
<i>Chrysosplenium glechomifolium</i>	Water-carpet	100	25
<i>Athyrium filix-femina</i>	Lady fern	100	7
<i>Oxalis</i>	Sorrel	86	18
<i>Tolmiea menziesii</i>	Piggyback plant	86	13
<i>Oenanthe sarmentosa</i>	Waterparsley	71	9
<i>Stachys mexicana</i>	Mexican betony	71	4
<i>Mitella ovalis</i>	Oval-leaved mitrewort	57	11
<i>Claytonia sibirica</i>	Siberian miner's lettuce	57	10
<i>Poa trivialis</i>	<i>Rough bluegrass</i>	43	54
<i>Urtica dioica</i> ssp. <i>gracilis</i>	Nettle	43	9
<i>Polystichum munitum</i>	Sword fern	43	6
<i>Mitella caulescens</i>	Leafy mitrewort	43	3
<i>Glyceria striata</i>	Tall mannagrass	43	3
<i>Blechnum spicant</i>	Deer fern	43	2
<i>Equisetum</i>	Horsetail species	43	2
<i>Bromus vulgaris</i>	Colombian brome	43	2
<i>Stellaria crispa</i>	Crisp sandwort	43	2
<i>Mimulus dentatus</i>	Tooth-leaved monkeyflower	43	1
<i>Digitalis purpurea</i>	<i>Common foxglove</i>	43	Tr

**Elevations:** 30 to 1440 feet (average 315 feet).

**Community:** Water-carpet is an herbaceous community occurring on surfaces that are inundated much of the year. Flood tolerant indicators for this type include water-carpet, water-parsley, and creeping buttercup. Salmonberry and red elderberry can occur in this community, but often provide overhanging cover only. Water-carpet, lady fern, sorrel, and piggyback plant are the most common species, but waterparsley, Mexican betony, oval-leaved mitrewort, and Siberian miner's lettuce are important associated species. This open, frequently disturbed community has the highest typical cover in grasses of all streamside types in northwest Oregon. It can also be extremely weedy. Rough bluegrass and

creeping buttercup can be dominants on some plots. Giant knotweeds can also invade this community.

**Valley cross sections showing CHGL5**

Cedar creek

Click on a creek name in the table to the left to see valley cross sections that show where CHGL5 occurs in relation to other plant associations.

**Geomorphic environment:** Geomorphic surfaces are most often directly adjacent to the channel, though some sites were in overflow channels, and one was in a swamp. Most sites are on gravel or cobble substrates, often with shallow sands over coarse alluvium. Rooting depth is limited by anaerobic conditions. Most sites are at or just above summer low flow. In one pit, located 30 cm above summer low flow, the water table was 63cm below the surface, 33 cm below the creek level. Two detailed soil descriptions are available. The pits show sandy loams over sands, or sandy clay loams over sandy clays. One pit showed mottling at 34 cm and gley at 63 cm, with summer water table at 73 cm. A plot in an overflow channel receives water from a seepy valley wall even during the dry season.



**Water-carpet community:** 1995 photo (left) shows community in overflow channel. On right, the 1997 photo shows impact of 1996 flood.

These sites are too frequently disturbed and under water too long to develop a stable tree and shrub component.

**Wetland rating:**

Community meets wetland test	Yes
Plots meeting wetland criteria	100%
Wetland indicators among dominant species	81% (range 60-100%)



**Creeping buttercup is a common non-native in the water-carpet and waterparsley communities.**

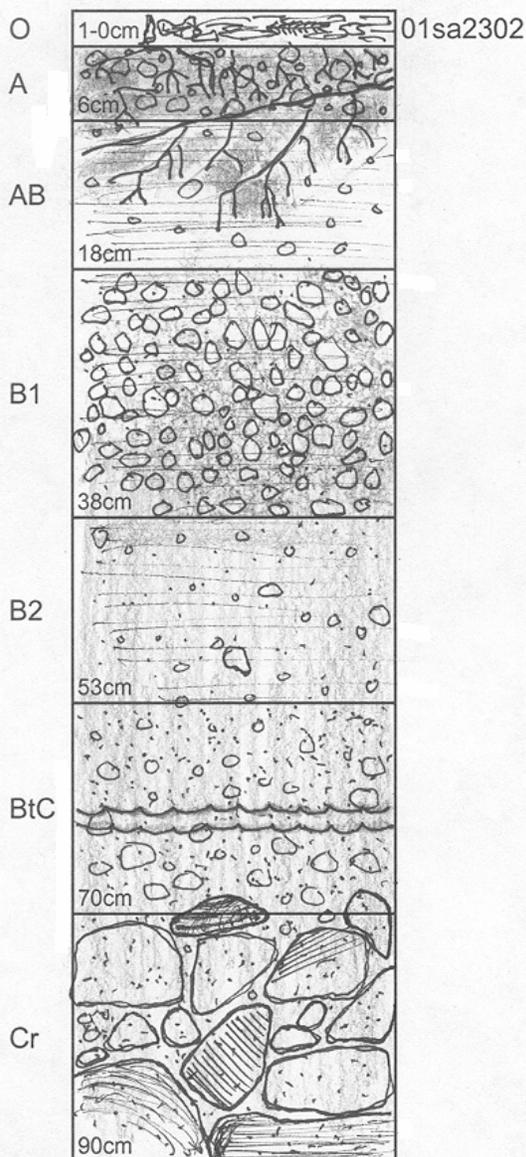
**Non-natives:** Exotic species were recorded on 43% of the sample.

EXOTIC	COMMON NAME	CONSTANCY %	PLOTS	TYPICAL COVER %
<i>Poa trivialis</i>	<i>Rough bluegrass</i>	43	3	54
<i>Digitalis purpurea</i>	<i>Common foxglove</i>	43	3	Tr
<i>Ranunculus repens</i> var. <i>repens</i>	<i>Creeping buttercup</i>	29	2	22
<i>Polygonum sachalinense</i>	<i>Giant knotweed</i>	14	1	2
<i>Cirsium arvense</i>	<i>Canada thistle</i>	14	1	1
<i>Senecio jacobaea</i>	<i>Tansy ragwort</i>	14	1	1
<i>Anthoxanthum odoratum</i>	<i>Sweet vernalgrass</i>	14	1	Tr
<i>Holcus lanatus</i>	<i>Common velvet-grass</i>	14	1	Tr

## Soil illustration: CHGL5

HORIZON	THICKCM	MUNSELL	TEXTURE	CFRAG	CFRAGPCT	VOIDS	ROOTS
O	1					25	
A	6	10YR2/1	SL	gravel	15	15	20
AB	12	10YR2/2	SiL	gravel	5	10	10
B1	20	7.5YR2.5/2	LS	gravel >1cm	40	15	5
B2	15	7.5YR2.5/2	LS	gravel	3	10	
BtC	17	7.5YR2.5/2	S	gravel	10		
Cr			R	cobble	65		

Total Depth: 70cm. Depth Limit: 70cm. Water Table: 63cm.



This sandbar has a well drained and breathable soil, with loamy horizons and overall decency as a rooting medium. It is a little surprising larger shrubs and herbs don't take advantage, but the surface is reset often, and herbivory is an issue. The organic deposition is minimal – just last year's needles. This plot is representative of sandbar plots 3 and 4 except that large woody debris has fallen over the latter plots leading to deep scouring. In effect, the surface horizon of plots 3 and 4 is the B1 horizon of plot 2. It is quite obvious that the 40% gravel composition of this horizon is imperative to retaining any soil at all. The vegetation on plot 4 in particular is hardy enough to anchor the soil further with roots.

An interesting feature here is that the water table is about 30cm below the level of water in the stream. Perhaps subsurface flow is moving fast enough not to necessitate a higher water table. Likewise, the water already in the stream is entering the channel further upstream, but may be experiencing a net loss of water to the hyporheic zone along this particular section. A similar theory could help explain the unusual water dynamics beneath site 01SA22.

***Oenanthe sarmentosa***  
**Waterparsley**  
**OESA**

N=5 (SNF 5)

SPECIES	COMMON NAME	CONSTANCY %	TYPICAL COVER %
<b>Trees-overstory</b>			
<i>Alnus rubra</i>	Red alder	20	25
<b>Trees-seedlings</b>			
<i>Alnus rubra</i>	Red alder	40	Tr
<b>Shrubs</b>			
<i>Rubus spectabilis</i>	Salmonberry	80	2
<i>Sambucus racemosa</i>	Red elderberry	80	2
<i>Ribes bracteosum</i>	Stink currant	40	1
<b>Herbs</b>			
<i>Oenanthe sarmentosa</i>	Waterparsley	100	17
<i>Athyrium filix-femina</i>	Lady fern	100	3
<i>Tolmiea menziesii</i>	Piggyback plant	80	17
<i>Ranunculus repens var. repens</i>	<i>Creeping buttercup</i>	80	16
<i>Oxalis trilliifolia</i>	Trillium-leaved sorrel	60	5
<i>Urtica dioica ssp. gracilis</i>	Nettle	60	5
<i>Rumex obtusifolius</i>	<i>Bitter dock</i>	60	4
<i>Galium triflorum</i>	Sweetscented bedstraw	60	1
<i>Digitalis purpurea</i>	<i>Common foxglove</i>	60	Tr
<i>Claytonia sibirica</i>	Siberian miner's lettuce	60	Tr
<i>Agrostis exarata</i>	Spike bentgrass	40	48
<i>Heracleum lanatum</i>	Cow-parsnip	40	38
<i>Scirpus microcarpus</i>	Small-flowered bullrush	40	13
<i>Glyceria striata</i>	Tall mannagrass	40	5
<i>Mitella ovalis</i>	Oval-leaved mitrewort	40	3
<i>Festuca subulata</i>	Bearded fescue	40	3
<i>Carex deweyana</i>	Dewey's sedge	40	2
<i>Holcus lanatus</i>	<i>Common velvet-grass</i>	40	1
<i>Prunella vulgaris</i>	Selfheal	40	1
<i>Stachys mexicana</i>	Mexican betony	40	1
<i>Stellaria crispa</i>	Crisp sandwort	40	Tr

**Elevations:** 30 to 420 feet (average 225 feet).

**Community:** Waterparsley is an herb dominated community, though salmonberry and red elderberry are frequently present at very low cover. Only one plot had a mature red alder present. The most common herb species are waterparsley, lady fern, piggyback plant, creeping buttercup, trillium-leaved

sorrel, nettle, and bitter dock. Many of the common species, such as waterparsley and creeping buttercup, are adapted to temporarily flooded conditions. Grasses, graminoids, and exotic species are prominent in this open, frequently disturbed type. Grasses average 38% summed cover. Important grass species include spike bentgrass, tall mannagrass, and bearded fescue. Graminoids (sedges, bulrushes) average 18% summed cover. Exotic species are present on every plot, from 2 -91% summed cover, average 38%.

<b>Valley cross sections showing OESA</b>
Porter creek
Elk creek

Click on a creek name in the table to the left to see valley cross sections that show where OESA occurs in relation to other plant associations.



**Waterparsley community: grassy open bar, frequently flooded.**

### **Geomorphic environments:**

Geomorphic surfaces include annually flooded sandy bars and islands, or bedrock channel margins. Some sites are within the bankfull zone. The Waterparsley community can be adjacent to the channel, or it can occur above the Horsetail or Water-carpet types.

Soil descriptions are from two pits. Both sites were fluvial deposits of sands in cobbles and boulders, with summer water tables within 45 to 60 cm of the surface. Soils textures were sands to loamy sands or silt loams. Neither had developed A and B horizons. Both showed saturated, anaerobic conditions in the lower profile. One had developed over bedrock.



These surfaces are flooded much of the winter. Moisture holding capacity in the upper horizons is poor, but conditions can be anaerobic in the lower profile. Disturbance and rooting conditions prevent succession to stable conifer stands. Risk of invasion by aggressive exotic species is high.

#### Wetland rating:

Community meets wetland test	Yes
Plots meeting wetland criteria	100%
Wetland indicators among dominant species	70% (range 57-83%)

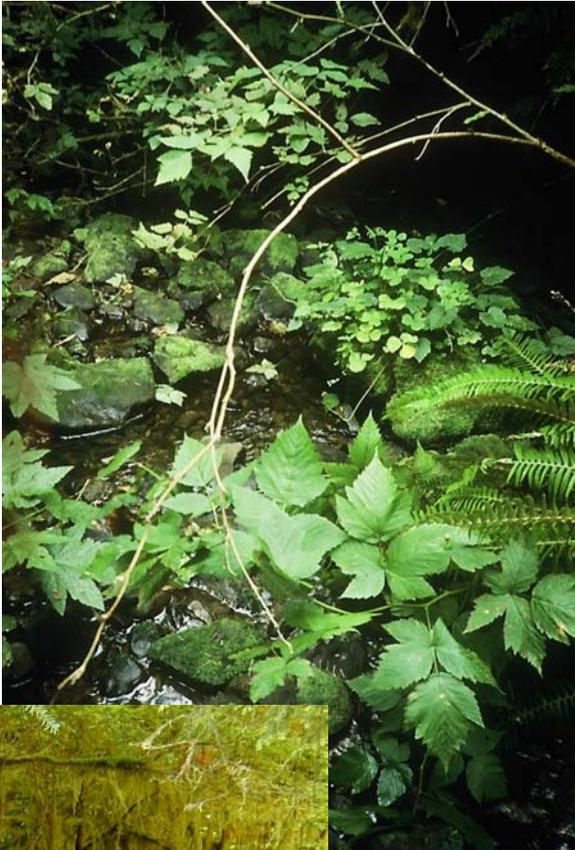
**Non-natives:** Exotic species were present on all plots in the sample.

EXOTIC	COMMON NAME	CONSTANCY %	PLOTS	TYPICAL COVER %
<i>Ranunculus repens var. repens</i>	<i>Creeping buttercup</i>	80	4	16
<i>Rumex obtusifolius</i>	<i>Bitter dock</i>	60	3	4
<i>Digitalis purpurea</i>	<i>Common foxglove</i>	60	3	Tr
<i>Holcus lanatus</i>	<i>Common velvet-grass</i>	40	2	1
<i>Phalaris arundinacea</i>	<i>Reed canarygrass</i>	20	1	50
<i>Mentha Xpiperita</i>	<i>Peppermint</i>	20	1	35
<i>Poa trivialis</i>	<i>Rough bluegrass</i>	20	1	15
<i>Senecio jacobaea</i>	<i>Tansy ragwort</i>	20	1	10
<i>Polygonum sachalinense</i>	<i>Giant knotweed</i>	20	1	1
<i>Solanum dulcamara</i>	<i>Bittersweet</i>	20	1	1
<i>Anthoxanthum odoratum</i>	<i>Sweet vernalgrass</i>	20	1	Tr

**Mid-channel bars or channel margin:**

Sorrel-piggyback plant, OXALI-TOME ..... p. 196

Salmonberry-stink currant/water-carpet, RUSP-RIBR/CHGL5 ..... p. 200



***Oxalis-Tolmiea menziesii***  
**Sorrel-piggyback plant**  
**OXALI-TOME**

N=13 (EBLM 6, SBLM 4, SNF 3)

SPECIES	COMMON NAME	CONSTANCY %	TYPICAL COVER %
<b>Shrubs</b>			
<i>Vaccinium parvifolium</i>	Red huckleberry	46	9
<b>Herbs</b>			
<i>Oxalis</i>	Sorrel	100	32
<i>Athyrium filix-femina</i>	Lady fern	100	17
<i>Tolmiea menziesii</i>	Piggyback plant	100	16
<i>Polystichum munitum</i>	Sword fern	77	14
<i>Stachys</i>	Betony species	62	14
<i>Mitella ovalis</i>	Oval-leaved mitrewort	54	13
<i>Adiantum pedatum</i>	Maidenhair fern	54	7
<i>Galium triflorum</i>	Sweetscented bedstraw	54	4
<i>Stellaria crispa</i>	Crisp sandwort	54	2
<i>Claytonia sibirica</i>	Siberian miner's lettuce	46	4
<i>Tiarella trifoliata</i>	Foamflower	38	12
unknown grass	Grass species	38	8
<i>Circaea alpina</i>	Enchanter's-nightshade	38	5

**Elevations:** 100 to 915 feet (average 650 feet).

**Community:** Sorrel-piggyback plant is an herbaceous community of low to moderate elevations across the Coast Range. Overhanging deciduous tree canopy is common, although only one plot had a red alder seedling (15 years old). The shrub layer is generally minor. Red huckleberry is often present, but roots readily on coarse woody debris. California hazel, vine maple, and thimbleberry canopies were also important on some plots, though cover may be from adjacent communities. The herb layer is dominated by sorrel, lady fern, and piggyback plant. Other associated species include sword fern, betony, oval-leaved mitrewort, maidenhair fern, and crisp sandwort.

This community lacks the species such as water-parsley or water-carpet which are well adapted to depositional bars frequently under prolonged flooding. The community also had a much lower percentage of grasses and weeds than the in-channel herbaceous communities.

<b>Valley cross sections showing OXALI-TOME</b>
Beacon creek
Whittaker creek

Click on a creek name in the table to the left to see valley cross sections that show where OXALI-TOME occurs in relation to other plant associations.

**Geomorphic environment:** Geomorphic surfaces include narrow active annual floodplains and steep stream banks.



**Sorrel-piggyback plant community:** photo illustrates herbaceous dominants, with lady fern gracefully overhanging sorrel and piggyback plant.

Soils are generally fairly shallow, with mottling and/or gleying within 50 cm. Water tables are often within 50 cm. O layers are well developed. A horizons are silt loams or sandy loams. B horizons are sandy clay loams, silty clay loams, or silty sands. Gleyed horizons can be perched above bedrock or cobble/gravel creekbed material. Multiple B horizons in some soil pits are evidence of repeated floods resetting the surfaces.

These active floodplains have well developed soils, but rooting conditions are affected by the shallow water table. The geomorphic surfaces are flooded annually.

**Wetland rating:**

Community meets wetland test	No
Plots meeting wetland criteria	23%
Wetland indicators among dominant species	45% (range 22-100%)

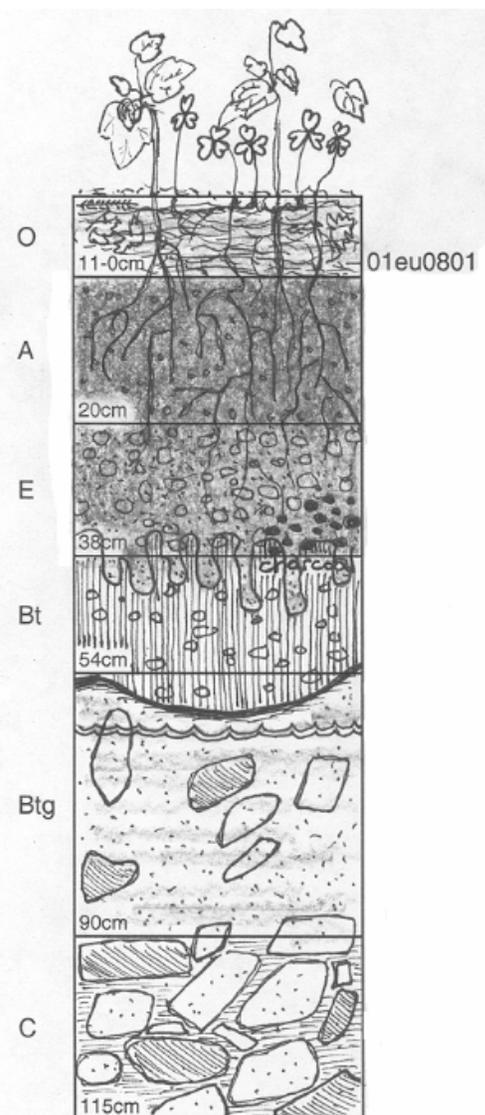
**Non-natives:** Exotic species were recorded on 31% of the plots.

EXOTIC	COMMON NAME	CONSTANCY %	PLOTS	TYPICAL COVER %
<i>Lactuca muralis</i>	<i>Wall-lettuce</i>	23	3	6
<i>Digitalis purpurea</i>	<i>Common foxglove</i>	8	1	4
<i>Hypochaeris radicata</i>	<i>Hairy cat's ear</i>	8	1	2

## Soil illustration: OXALI-TOME

HORIZON	THICKCM	MUNSELL	TEXTURE	CFRAG	CFRAGPCT	VOIDS	ROOTS
O	11						
A	20	10YR2/2	SiL	gravel	10	20	20
E	18	10YR3/2	LS	gravel	30	15	5
Bt	16	5YR4/6	LC	gravel	8	15	2
Btg	36	10YR4/2	SCL	cobble	30	5	0
C				cobble	70	3	0

Total Depth: 90cm. Depth Limit: ~90cm. Gley: 55cm. Mottle: 38cm.



Extremely loose, poorly structured and wet, the A horizon is being held steady by roots of small plants; there is no way a tree can hold on for long – many have tried and all have died. An E horizon is a zone of maximum eluviation, meaning clays are exiting, and organic matter that enters isn't retained. These horizons are typically light colored and sandy, sometimes mottled or gleyed in places. This one has lots of gravel, generally rounded and smaller than 2cm. A light brown color suggests aeration but minimal organic deposition. This horizon is about even with plot 3 across the creek, and I doubt it continues very far upslope.

Dark reds in the Bt horizon show the high level of the water table in winter. Oxides left behind demonstrate aeration. Between the Bt and Btg horizons is a 2cm thick band of highly organic material. I believe downward illuviation is stalled because OM tends to “float” above saturated horizons. Despite the apparent inability of this soil to hold trees upright, the subsoil is well developed and stable. The water table is effectively 54cm in the summer and trees may not put roots below it.

The Btg horizon is questionably gleyed. It has a reddish hue to it (10YR4/2), but is gleyed in comparison to the Bt and is definitely saturated all the time. Rocks and soil in the Btg are nearly dripping with moisture, but water does not accumulate in the pit. This means not a huge amount of water is moving down the slope, but it is moving quickly and freely.

***Rubus spectabilis*-*Ribes bracteosum*/*Chrysosplenium glechomifolium*  
Salmonberry-stink currant/water-carpet  
RUSP-RIBR/CHGL5**

N=19 (SNF 14, SBLM 4, EBLM 1)

SPECIES	COMMON NAME	CONSTANCY %	TYPICAL COVER %
<b>Trees-overstory</b>			
<i>Alnus rubra</i>	Red alder	26	69
<b>Shrubs</b>			
<i>Rubus spectabilis</i>	Salmonberry	100	22
<i>Ribes bracteosum</i>	Stink currant	84	17
<b>Herbs</b>			
<i>Athyrium filix-femina</i>	Lady fern	95	17
<i>Tolmiea menziesii</i>	Piggyback plant	95	13
<i>Chrysosplenium glechomifolium</i>	Water-carpet	89	10
<i>Oxalis</i>	Sorrel species	86	25
<i>Polystichum munitum</i>	Sword fern	74	11
<i>Galium triflorum</i>	Sweetscented bedstraw	68	3
<i>Stachys mexicana</i>	Mexican betony	68	2
<i>Oenanthe sarmentosa</i>	Waterparsley	63	5
<i>Viola glabella</i>	Stream violet	63	1
<i>Claytonia sibirica</i>	Siberian miner's lettuce	53	2
<i>Mimulus dentatus</i>	Tooth-leaved monkeyflower	47	5
<i>Mitella ovalis</i>	Oval-leaved mitrewort	47	3
<i>Mimulus guttatus</i>	Yellow monkeyflower	47	2
<i>Equisetum</i>	Horsetail species	47	1
<i>Blechnum spicant</i>	Deer fern	42	3
<i>Stellaria crispa</i>	Crisp sandwort	42	1
<i>Carex</i>	Sedge species	37	2
<i>Tiarella trifoliata</i>	Coolwort foamflower	37	2
<i>Glyceria striata</i>	Tall mannagrass	37	1
<i>Carex deweyana</i>	Dewey's sedge	37	1
<i>Bromus vulgaris</i>	Colombian brome	37	1
<i>Cardamine angulata</i>	Angled bittercress	37	tr

**Elevations:** 50 to 1440 (average 560 feet).

**Community:** The Salmonberry-stink currant/water-carpet community is a mid-channel bar or channel-margin type. This community is dominated by salmonberry, with stink currant a frequent co-dominant. Overstory red alder, big leaf maple, and spruce, 5 to 45 years old, are found on a few plots in this community. Dominant species in the herb layer are trillium-leaved sorrel, lady



**Salmonberry-stink currant/water-carpet: water is never far away from this community.**

fern, and piggyback plant. Some members of a suite of flood-tolerant indicators are always present. These include water-carpet, waterparsley, yellow monkeyflower, and small-flowered bulrush. Mexican betony, nettle, horsetail, sedges and grasses are also important associates. Where trees are present, shrub covers are higher and sword fern more common. Where trees are absent, coltsfoot tends to occur more often.

**Geomorphic environments:** Geomorphic surfaces are most often mid-channel bars, though annual floodplains and stream banks also are found with this community. These sites are flooded much of the winter. Some surfaces were bisected by active or overflow channels. Substrates ranged from seepy silt-covered bedrock to gravel bars and cobble bars, to sand trapped between mossy boulders. Soils varied. The community generally occurs where water is within 70 cm. Annual floodplain plots had sandy loams or loamy sands with mottles or gleying within 60 cm overlaying coarse alluvium or bedrock. Gravel and cobble bars were within annual high water line. Plots notes from these sites showed shallow sand layers over cobbles. The Salmonberry-stink currant/water-carpet community is most often directly adjacent to the channel. However, occasionally the Horsetail or Water-carpet communities can be found between the channel and the Salmonberry-stink currant/water-carpet community.

**Wetland rating:**

Community meets wetland test	Yes
Plots meeting wetland criteria	89%
Wetland indicators among dominant species	81% (range 50-100%)

**Non-natives:** Exotic species were recorded on 50% of the plots.

EXOTIC	COMMON NAME	CONSTANCY %	PLOTS	TYPICAL COVER %
<i>Poa trivialis</i>	<i>Rough bluegrass</i>	26	5	10
<i>Digitalis purpurea</i>	<i>Common foxglove</i>	16	3	2
<i>Agrostis stolonifera</i>	<i>Creeping bentgrass</i>	11	2	2
<i>Ranunculus repens</i> var. <i>repens</i>	<i>Creeping buttercup</i>	11	2	2
<i>Senecio jacobaea</i>	<i>Tansy ragwort</i>	11	2	tr
<i>Cirsium vulgare</i>	<i>Bull thistle</i>	11	2	tr
<i>Phalaris arundinacea</i>	<i>Reed canarygrass</i>	5	1	6
<i>Leucanthemum vulgare</i>	<i>Oxeye daisy</i>	5	1	3
<i>Hypochaeris radicata</i>	<i>Hairy cat's ear</i>	5	1	2
<i>Lotus corniculatus</i>	<i>Bird's-foot trefoil</i>	5	1	2
<i>Solanum dulcamara</i>	<i>Bittersweet</i>	5	1	2
<i>Agrostis capillaris</i>	<i>Colonial bentgrass</i>	5	1	1
<i>Rumex obtusifolius</i>	<i>Bitter dock</i>	5	1	tr
<i>Holcus lanatus</i>	<i>Common velvet-grass</i>	5	1	tr
<i>Stellaria media</i>	<i>Chickweed</i>	5	1	tr

**Other studies:** This community is somewhat similar to the Red alder/Salmonberry/Pacific Golden-saxifrage Forest Community (ALRU/RUSP/CHGL), previously described for the Olympic Experimental State Forest in Chappell (1999).

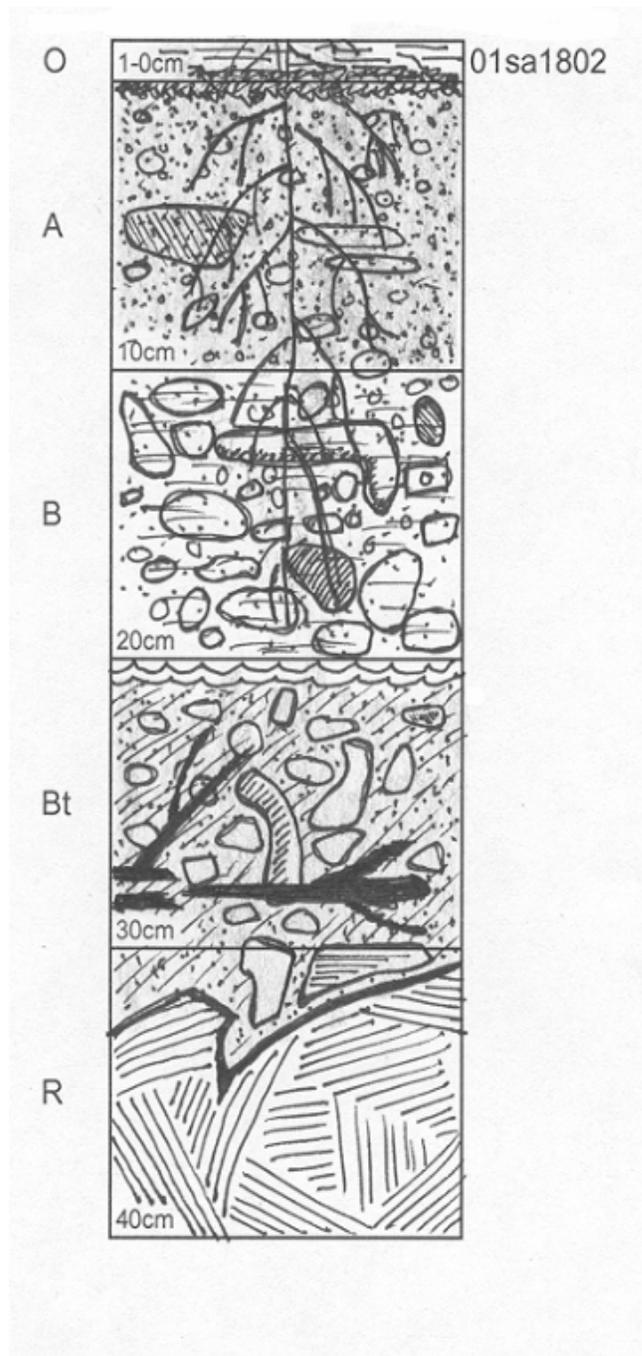
<b>Valley cross sections showing RUSP-RIBR/CHGL5</b>
N Fork Smith #2
Trib W Fork Deadwood creek
Elk creek
Whittaker creek

Click on a creek name in the table to the left to see valley cross sections that show where RUSP-RIBR/CHGL5 occurs in relation to other plant associations.

## Soil illustration: RUSP-RIBR/CHGL5

HORIZON	THICKCM	MUNSELL	TEXTURE	CFRAG	CFRAGPCT	VOIDS	ROOTS
O	1						
A	10	10YR3/4	S	gravel / gravel < .2cm	30 / 10	20	10
B	10	10YR4/2	LS	gravel / cobble	20 / 25	8	5
Bt	10	10YR3/3	SCL	gravel / cobble	20 / 10	5	0
R			R	bedrock	100	0	0

Total Depth: 30cm. Depth Limit: 30cm to R. Water Table: 20cm.



There is very little O horizon because the pit was directly under a fallen tree. The humus that is here was likely deposited this past winter. A horizon has very coarse gravel (up to 5 cm), but no cobbles yet. Under this log, not much organic matter has accumulated in the A, but this appears typical. Entirely alluvial sediments with stratification.

B horizon transitions to a Bt just below the water table at 20cm. Clay skins noticeable. Saturated, but not discolored, except by woody debris that is so decomposed it is just slick mush. The reason to dig under this log is for undisturbed alluvial deposits dammed by another log. The digging ended at what appears to be a solid piece of mudstone bedrock that goes all the way across the creek and under the opposite bank.